# Curriculum Foundations - Overview

## First Trimester:

* Intro to:
  + Emacs
  + Vim
  + Git/Github
* C
  + Basics
  + Functions
  + Pointers
  + Data Structures
    - Singly Linked Lists
    - Arrays
* Bit Manipulation
* Variadic Functions
* Memory Management
* File Redirection
* printf
* Shell
* Compilation
* Heap/Stack
* Linux
  + Basics
  + Permissions
  + Redirections
  + Syscalls
* Static Libraries
* Social Media
* Public Speaking/Stand ups

## Second Trimester:

* Python
* Basics
* Object-Oriented Programming
* Interpreted Languages
* Test Driven Development
* Error Handling
* I/O
* Web Scraping
* C
  + Data Structures
    - Stacks/Queues
    - Doubly Linked Lists
    - Hash Tables
    - Binary Trees
  + Algorithms
    - Sorting
    - Big O
  + Dynamic Libraries
* Linux
  + Processes and Signals
  + Scripting
  + Command Line
* Databases
  + SQL
  + MySQL
* Systems Engineering
  + Open Systems Interconnection Model
  + TCP/IP
* Airbnb Project
  + HTML
  + CSS
  + JSON
  + Unit Testing

## Third Trimester:

* Systems Engineering/Devops
  + SSH
  + SSL/TLS
  + HTTP/S
  + Webstack Debugging
  + Servers
  + Web Servers (Nginx)
  + Application Servers (Gunicorn)
  + Configuration Management (Puppet)
  + Load Balancers
  + Postmortems
  + Networking
  + Monitoring
* C
  + Algorithms
    - Searching
* Airbnb Project
  + Javascript
  + JQuery
  + Deployment
  + APIs
    - Flask
* Hack Days
* Python
  + ORMs (SQLAlchemy)
  + Templating (Jinja2)
* Code Debugging
* Regexes

## All Three Trimesters:

* Technical Writing
* Recursion
* Collaboration
* The Framework
* Whiteboarding
* Mock Interviews
* Time Management

## Additional Information

After you complete the Foundations program, a whole new series of paths open up for you. Known as “Specializations”, you can pick where you will take your focus for the fourth sprint of the curriculum.

We have two Specializations:

* Back-end
* Front-end

# Curriculum Short Specializations - Overview

## Front-end

### Specialization

* Modern JavaScript
  + ES6
  + TypeScript
* Front-end
  + Advanced HTML
  + Advanced CSS
  + Responsive design
* React I
  + Intro
  + Props
* React II
  + State
  + Immutable
  + Inline-styling
* React Redux
  + Action creator & normalizr
  + Reducer & Selector
  + Connector & Provider
* Portfolio project

### Soft-skills & Interview preparation

* Technical Writing
* Collaboration
* The Framework
* Whiteboarding
* Mock Interviews
* Time Management
* Interview algorithm practice

## Back-end

### Specialization

* Modern JavaScript
  + ES6
  + TypeScript
  + Node JS basic
  + Unittests
* Python
  + Variable annotations
  + Async
  + Unittests and integration tests
* Storage
  + Advanced MySQL
  + NoSQL
  + Redis
* Back-end
  + Pagination
  + Caching
  + i18n
  + Queuing system in JS
* User Data
  + Personal data
  + Authentication - Basic & Session
  + User authentication
* Portfolio project

### Soft-skills & Interview preparation

* Technical Writing
* Collaboration
* The Framework
* Whiteboarding
* Mock Interviews
* Time Management
* Interview algorithm practice